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P A P E R S  
IN  
M E C H A N I C S.

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No. I.

BUILDERS' LEVEL.

*The sum of FIVE GUINEAS was this session presented to Mr. GEORGE HOOPER, No. 1, Bury-street, Chelsea, for his Builders' Level. The following communication has been received from him, and a model of the instrument has been placed in the Society's repository.*

King's Palace, St. James's Park,  
12th January, 1826.

SIR,

BEING for many years past engaged in the same profession I now fill, as foreman of works in various extensive buildings, I have often had reason to regret the want of some more portable instrument than the common builders' level, it being in some measure an incumbrance, particularly so in windy weather, at which time also the correct application of the line and plummet is both tedious and difficult.

I was therefore induced to apply the principle of the spirit level to a pair of boards having parallel edges, which I found more portable, as well as perfectly adapted to obviate the inconvenience of the plummet and line, in consequence of its liability to be blown out of the perpendicular. I then applied the same principle to the same instrument, so as to obtain an operative plum line, which I found equally true, and possessing all the advantages over the common one that it has in regard to the level.

It is now five years since I made this instrument, during which time I have always used it. I carry it generally in my hand during the time I am on the building. It has often been used by the workmen under my care, and by others; but I have never seen, nor have I ever heard of, any other instrument of the like make or description being made use of.

It having lately fallen under the notice of some gentlemen connected with the Society for encouraging Arts, Manufactures, and Commerce, who consider it an object likely to be worthy of the Society's consideration, I am induced to trouble you with this account. The instrument is left at the Society's house for your inspection.

I am, Sir,

&c. &c. &c.

GEORGE HOOPER,

*Mason.*

*A. Aikin, Esq.*

*Secretary, &c. &c.*

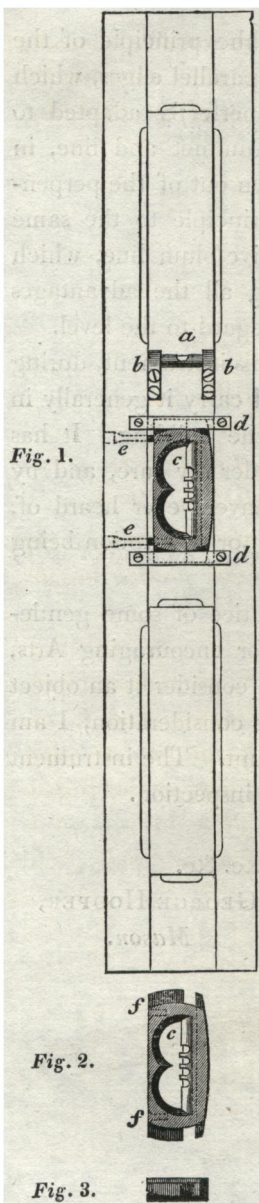


Fig. 1 shows the rule in its vertical position, as indicated by a small spirit-level *a*, accurately adjusted and secured in its place by brass straps *b b*; this level is well protected by being imbedded within the thickness of the rule. A second spirit level *c* is adapted for using the rule horizontally; but as this is made to adjust for different slopes, the spirit level is imbedded in a piece of wood, shown separately in figs. 2 and 3, placed within the middle of the rule, and retained there by four brass straps *d d*, two on each side of the rule, those on one side being a little longer than on the other, to allow the screws which secure them to pass each other. Two adjusting screws *e e*, shown by dotted lines, are let into the upper edge of the rule, and so deep that on raising one to depress the other its head may never rise above the surface. Two short screws are let into the wood at *f f*, fig. 2, seen also by dotted lines in fig. 1, merely to give a hard surface for the adjusting screws *e e* to act against; thus the rule may be adjusted from level to any slope within the pro-

vided range. The bottom or sole of the wooden frame in which the level *c* is fixed is made somewhat curvilinear, so as to enable it to yield to the pressure of the adjusting screw.

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No. II.

GERMAN BORING-BIT.

*The THANKS of the Society were voted to BRYAN DONKIN, Esq., Chairman of the Committee of Mechanics, for two German Boring-bits presented by him to the Society. The instruments have been placed in the Society's repository.*

THE boring-bit, of which the following is a description, was met with by Mr. Donkin in Germany, and it appeared to him, as it did subsequently to the Society, that it might be in some cases a useful addition to the implements already used in this country. The instrument is very simple, enters the wood easily, bores rapidly, and forms a clean hole.

Fig. 1.

